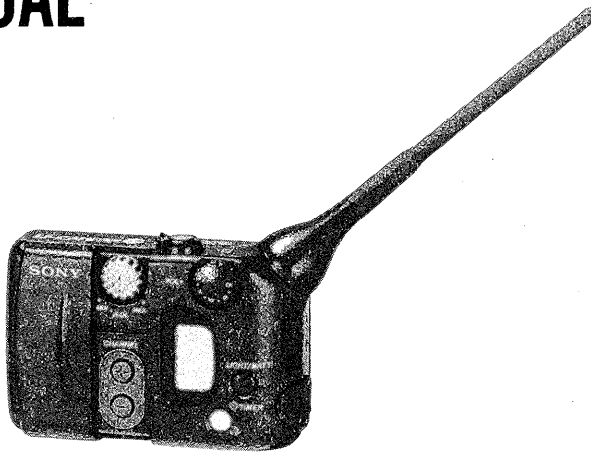


ICB-U100

SERVICE MANUAL

E Model



SPECIFICATIONS

Operating frequency	422.2 – 422.3 MHz
	9 channels (12.5 kHz steps)
Antenna	Whip antenna 1/4 wavelength
Communication system	Push-to-talk (single transmission)
	system
Type of modulation	F3E
Transmitting power	10 mW
Circuitry	Double superheterodyne
	Audio power output 140 mW
	(at 10% harmonic distortion)
	Speaker 3.6 cm dia. 4.0 ohms
	(the supplied speaker-microphone)
Power requirements	4.5 V DC, three R6 (size AA)
	batteries
Operating temperature range	– 10°C to + 50°C
Battery life *	Sony AM-3(N): Approx. 40 hours
	Sony SUM-3(NS): Approx. 20 hours
	*When the unit is continuously used in the power saving mode (with SQL on) with 30-second transmissions, 30-second receptions, and 4-minute waiting periods. The battery life varies with the temperature.

Auto Power Off	90 minutes
Dimensions	Approx. 108 × 71 × 38 mm (w/h/d)
	not including the antenna and projecting parts
Weight	Approx. 240 g
	including batteries
Accessories supplied	Speaker-microphone
	(CBM-20) (1)
	Belt clip (1)
	Carrying case (1)

Design and specifications subject to change without notice.

Optional accessories	AC power adaptor AC-E45M
	Car battery cord DCC-E145L
	Earphone ME-L82

Note on the speaker-microphone

The supplied speaker-microphone is only for this transceiver. Even if the jack shapes are alike, other manufacturers' speaker-microphones cannot operate this unit.

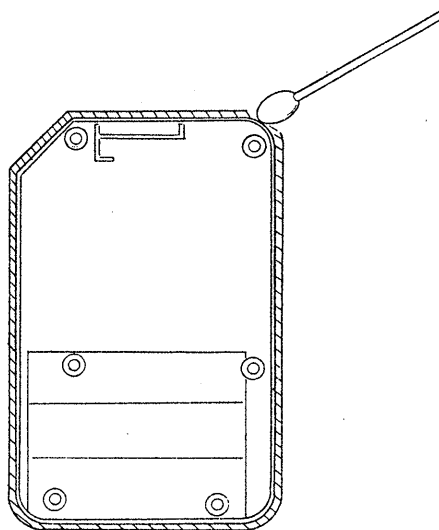
TRANSCIVER
SONY®

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Water Resistant

When the repair is completed and the removed cabinet is attached, make sure to conduct the following process. Apply Sony grease SGL-505 (7-662-010-04) to the rib of the rear cabinet ass'y with a cotton swab.



Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

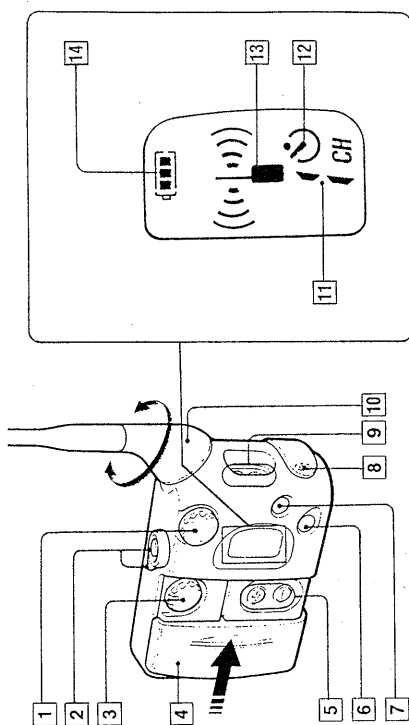
Special Screw

Special screws cannot be removed with the user so that they do not remodel this unit. Therefore, use the following screwdriver to remove the screw.

7-721-052-08 : Special screwdriver

Location of Controls

Refer to the pages indicated in ● for details.



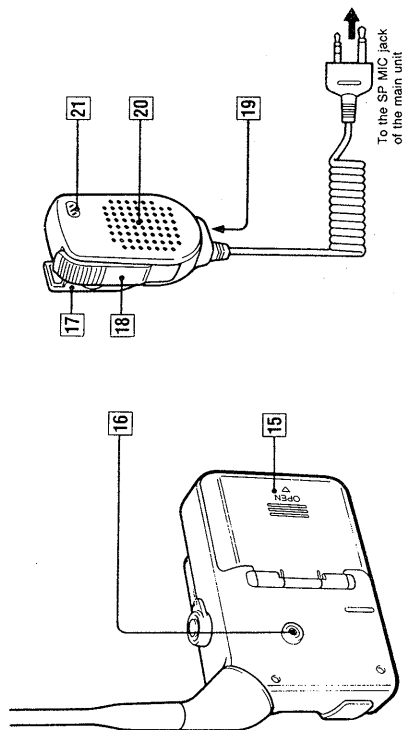
The Main Unit

- 1 VOL (volume) control
- 2 POWER/AUTO OFF button, POWER LOCK
You can lock POWER ON or OFF.
- 3 SOL (squench) control ● ●
Use to lower static noise while receiving and waiting for reception.
- 4 Cover
After you adjust the squelch and the channel, close the cover by sliding it horizontally.
- 5 Channel selector button (+/-) ●
- 6 TIMER button (⌚) ●
- 7 LIGHT/BATT (Light/Battery) button ●
- 8 DC IN 4.5 V (house current) jack ●
To prevent water from going into the jack, close the jack cover while it is not in use. Make sure to close the cover all the way, pushing it with your finger.
- 9 SP MIC (speaker-microphone) jack ●
- 10 Antenna
Revolves 360 degrees.

Display Window

- 11 CHANNEL indication ●
- 12 TIMER indication ●
- 13 Communication indication ●
- 14 Battery power indication ●

Location of Controls



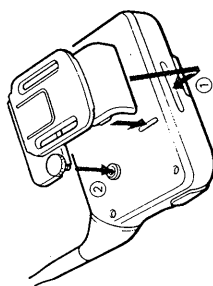
Speaker-Microphone

- 17 Clip
Revolves 360 degrees. You can hang the speaker-microphone on a hook in a car, etc., using the hole in the clip.
- 18 TALK button ●
Hold this button down during transmission, and release it during reception.
- 19 (Earphone) jack
Connect an optional earphone to this jack. When it is not in use, close the jack cover to keep it water-tight.
- 20 Speaker
- 21 Microphone

Rear of the Main Unit

- 15 Battery compartment
- 16 Screw hole for a belt clip

Attaching the belt clip
Attach the belt clip after installing the batteries.



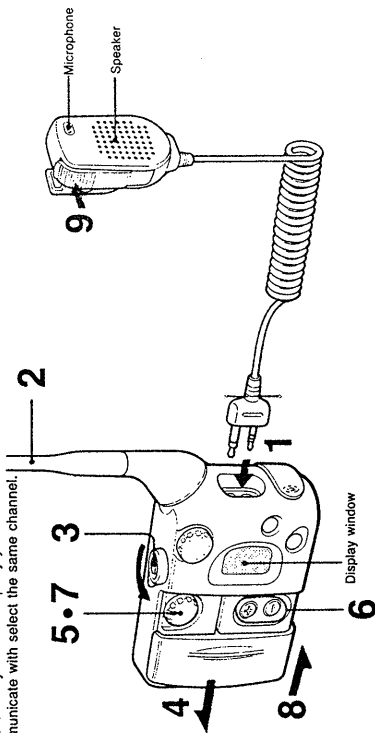
- 1 Install the supplied belt clip fitting the projecting parts of the clip into the grooves on the bottom and rear of the main unit.
- 2 Tighten the belt clip screws.

SECTION 1 GENERAL

This section is extracted from instruction manual.

Operation

Be sure that you and the party you want to communicate with select the same channel.



Set up

- 1 Connect the speaker-microphone to the main unit.**
You cannot communicate without the speaker-microphone connected to the main unit.

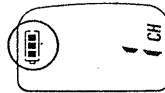
- 2 Adjust the antenna so that it stands vertically with respect to the earth.**

The antenna rotates 360 degrees and can be fixed at the best position to communicate. When you use the unit attached to your belt, be careful to keep the antenna away from your body; otherwise, the operating range may be reduced. Keep the top of the antenna about 5 cm away from your body.

- 3 Release the POWER LOCK button and press the POWER button.**

The remaining battery life is indicated for 5 seconds in the display window as illustrated. Be sure battery power remains sufficient for your communication. (Battery power indications are shown on the page 6.) After turning the POWER on, set the POWER LOCK to LOCK.

- 4 Open the cover.**



- 5 Turn the SOL control counter-clockwise to MIN (minimum).**

You should be able to hear static noise. (If no static noise can be heard, turn the VOL control clockwise till static noise can be heard.)

- 6 Select the channel.**

Each press on the + or - button advances or decrements the channel by one. To advance or decrement the channel rapidly, keep + or - depressed. When you turn the POWER on, the channel you used for the previous communication is displayed.*



- 7 Turn the SOL control clockwise till the static noise disappears.**

If you turn the SOL control too far clockwise, you cannot receive weaker signals.



- 8 Close the cover.**

To prevent misoperation after adjusting the CHANNEL and the SOL control, we recommend you to use the transceiver with the cover closed.

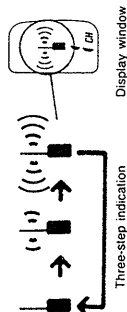
* If you disconnect the batteries, the AC adaptor, or the car battery cord after the previous communication, the channel display will show "1" when you turn the POWER on.

Operation

Transmission

- 9 Keeping the TALK button depressed, speak into the microphone in a normal voice.**

Keep the microphone about 5 cm away from your lips. While pressing the TALK button, you can transmit. While you are transmitting, the following 3-step indication appears in the display window.



Reception

- 10 Release the TALK button and listen to your contact through the speaker.**

When the TALK button is released, the unit automatically switches to reception.

To continue communication

After your contact has completed his transmission with the word "OVER", depress the TALK button and transmit.

To end communication

Send the word "OUT" and turn off the POWER button.

Helpful Tips on Operation

■ Power saving mode

If the transceiver doesn't receive a signal for 8 seconds, you will hear a swishing sound (through the speaker) which means the unit is now in power saving mode (when the SOL control is on, i.e. static noise goes off). As soon as the transceiver receives a signal, it will exit power saving mode.

■ Channels

- If your channel is not the same as that of your contact, no communication can take place. (Transceivers have their own communicable frequency channels. Be sure that your transceiver and your contact's transceiver have the same frequency channels.)
- If the desired channel is not available because of interference, etc., switch to another channel which is not in use. In this case your contact should also switch to the same channel.

■ If the power is on for 90 minutes

If none of the controls except for the LIGHT/BATT and TIMER buttons have been operated for more than 90 minutes, the unit will go off automatically (Auto Power Off) when the SOL control has been turned clockwise (i.e. static off).

■ Operating range

The operating range will vary greatly depending on local terrain and conditions. The following distances are only approximations:

In metropolitan areas:	Approx. 100 - 200 m
In suburban areas:	Approx. 1 - 2 km

In heavy traffic conditions, these ranges may be decreased or the voice coming out may be unclear because of ignition noise interference.

■ General

- Simultaneous transmission and reception are not possible. Transmit only after your contact has completed his transmission.
- Avoid touching the antenna while the unit is operating, as this may reduce the operating range.
- If none of the buttons functions or incorrect indications appear, remove the batteries and after 30 seconds install them again.

Operation

Helpful Tips on Operation

■ Power saving mode

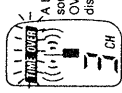
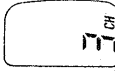
If the transceiver doesn't receive a signal for 8 seconds, you will hear a swishing sound (through the speaker) which means the unit is now in power saving mode (when the SOL control is on, i.e. static noise goes off). As soon as the transceiver receives a signal, it will exit power saving mode.

■ Channels

- If your channel is not the same as that of your contact, no communication can take place. (Transceivers have their own communicable frequency channels. Be sure that your transceiver and your contact's transceiver have the same frequency channels.)
- If the desired channel is not available because of interference, etc., switch to another channel which is not in use. In this case your contact should also switch to the same channel.

■ TIME OVER

One transmission is limited to 30 seconds. In order to warn you that your transmission time is almost over, the indication in the display window changes as follows:

Conditions	Indications displayed
With the TALK button depressed, 25 seconds have passed.	
When you continue transmission beyond 5 seconds (30 seconds in total)	
When you release the TALK button	

When 30 seconds have passed with the TALK button depressed

Release the TALK button. After at least a 2-second reception, you can transmit again.

■ If the power is on for 90 minutes

If none of the controls except for the LIGHT/BATT and TIMER buttons have been operated for more than 90 minutes, the unit will go off automatically (Auto Power Off) when the SOL control has been turned clockwise (i.e. static off).

■ Operating range

The operating range will vary greatly depending on local terrain and conditions. The following distances are only approximations:

In metropolitan areas:	Approx. 100 – 200 m
In suburban areas:	Approx. 1 – 2 km

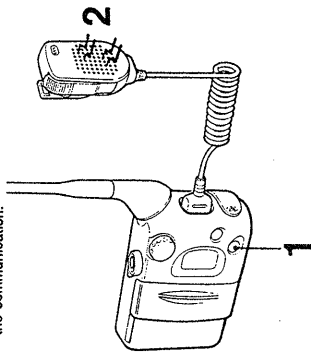
In heavy traffic conditions, these ranges may be decreased or the voice coming out may be unclear because of ignition noise interference.

■ General

- Simultaneous transmission and reception are not possible. Transmit only after your contact has completed his transmission.
- Avoid touching the antenna while the unit is operating, as this may reduce the operating range.
- If none of the buttons functions or incorrect indications appear, remove the batteries and after 30 seconds install them again.

Using the Timer

"Let's have a talk after one hour." You can schedule your next transmission with the TIMER function. The alarm will tell you when to start the communication.

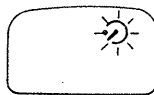


1 Press the TIMER button.
When the POWER is on, the channel in use is displayed.



While the TIMER is functioning

2 After about 60 minutes, the alarm sounds.
The alarm and the TIMER indication go off automatically after one minute. To turn them off immediately, press the TIMER button.



When 60 minutes have elapsed

- The TIMER functions independently of the POWER ON/OFF.
- To cancel the TIMER before 60 minutes, press the TIMER button again.
- Communication is possible while the TIMER is functioning.

Note

When the batteries, the AC adaptor, or the car battery cord is disconnected after the TIMER has been set, the TIMER setting will be cancelled.

SECTION 2

DISASSEMBLY

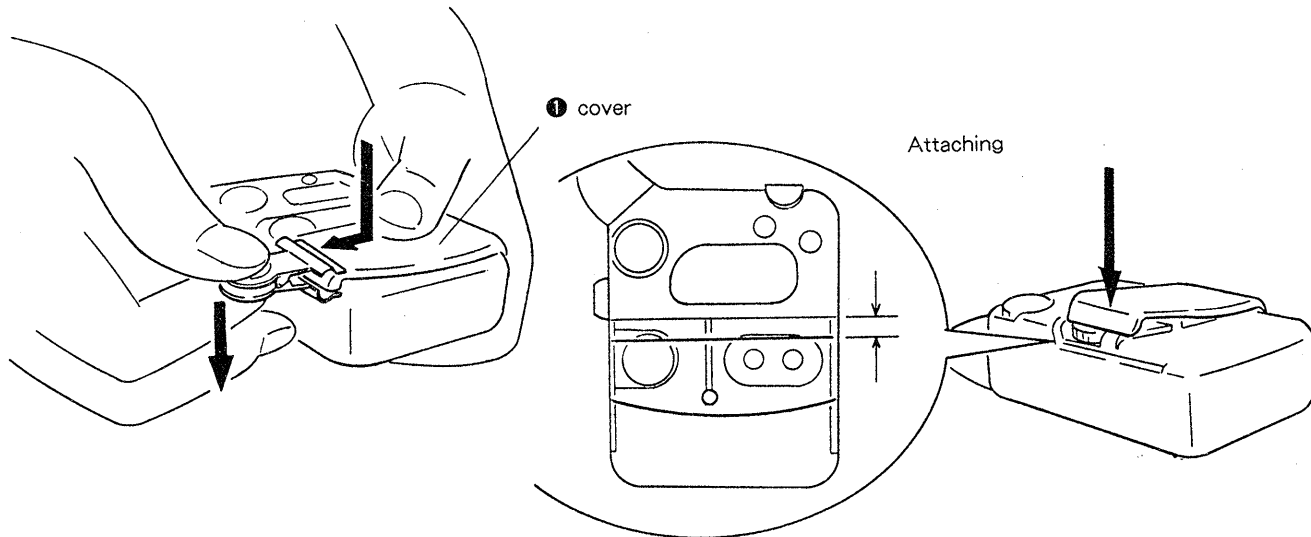
COVER

Slide cover ❶ (so that the SQ control is visible).

Push cover ❶ to the left while pressing the center of cover ❶ and remove the cover from the unit by inserting a clip between the cover and unit (clip thickness: approximately 0.5 mm).

When attaching the cover, the cover is attached to the position as shown in the figure (so that the SQ control is visible).

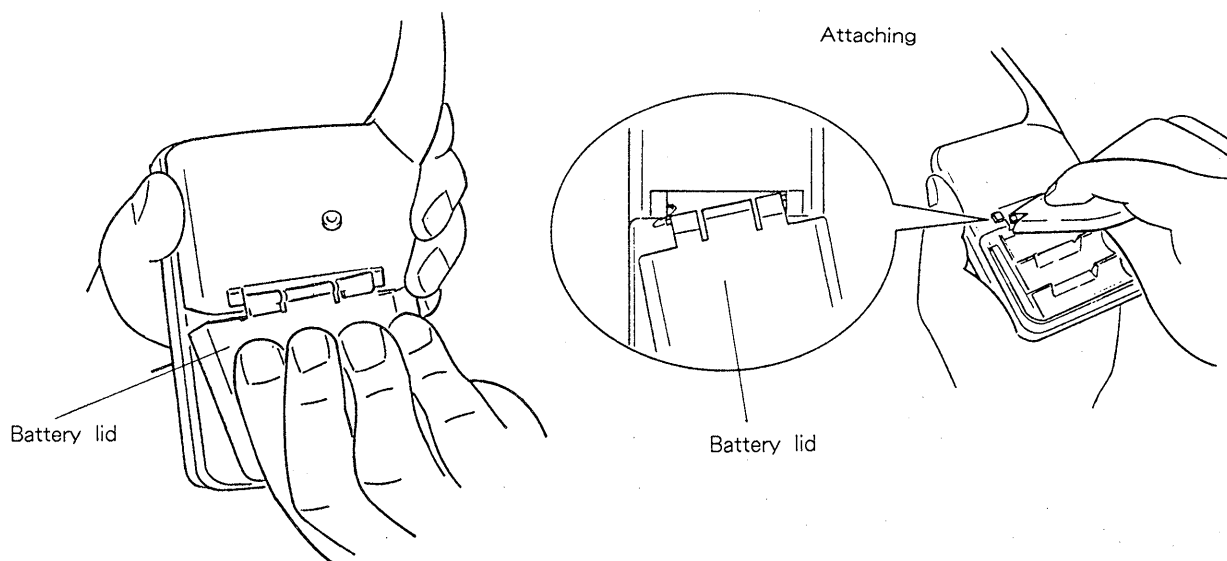
(Note: Steel ball and spring are inserted beneath the cover.)



BATTERY LID

Firmly hold, press both sides of the battery lid to slightly bend the hinge and remove the lid.

When attaching the lid slightly, bend the hinge as shown above and diagonally attach the lid as shown in the figure.



SCTION 3 ELECTRICAL ADJUSTMENT

Carrier frequency for channel

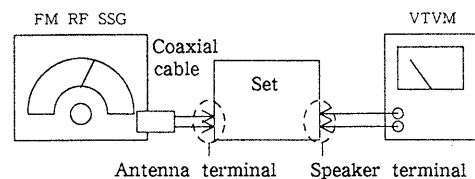
(Frequency difference among the channels is 12.5 kHz)

1CH	422.2 MHz
2CH	422.2125 MHz
3CH	422.225 MHz
4CH	422.2375 MHz
5CH	422.25 MHz
6CH	422.2625 MHz
7CH	422.275 MHz
8CH	422.2875 MHz
9CH	422.3 MHz

PLL Reference Frequency Adjustment

1. Turn the power ON and set the unit to the transmission mode.
2. Press “+” key to set to 5CH.
3. Adjust CT1 so that the frequency of the antenna terminal satisfies the specification.
Specification : 422.249850 – 422.250150 MHz

Reception Adjustment

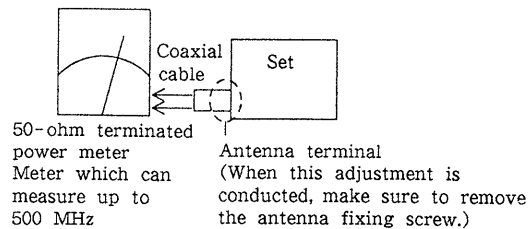


Carrier frequency : 422.25 MHz (5CH)

Input level : -4 dB u V1.5 kHz deviation

1. Turn the power ON.
2. Adjust T1 and T2 so that the reading of VTVM is maximum.

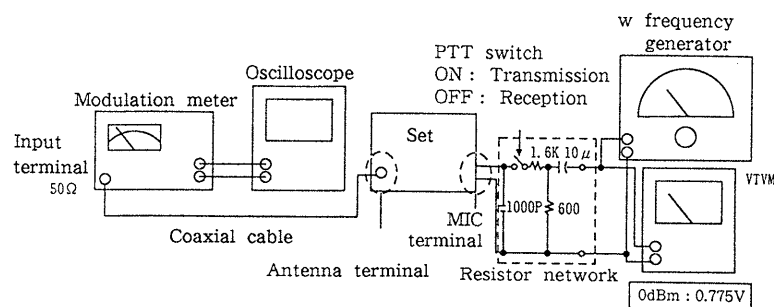
Transmission Output Adjustment



1. Turn the power ON.
2. Press “+” key to set to 5CH.
3. Turn the transmission switch ON. Adjust RV1 so that the reading of the power meter satisfies the specification value.

Specification : 9 to 10 mW

Modulation Sensitivity Adjustment



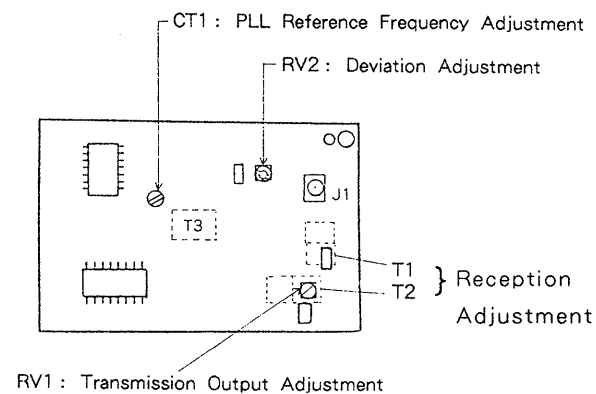
1. Turn the power ON.
2. Supply 1 kHz/0 dB signal from the low frequency generator to the MIC jack via the resistor network. (PTT switch is ON.)
3. Adjust RV2 so that the reading of the modulation meter is 2.5 kHz ± 0.1 kHz (2.49 to 2.51 kHz) (frequency deviation).
4. Set the level of the low frequency to -37 dBm and check that the frequency deviation is within 1.6 to 1.9 kHz.

Note)

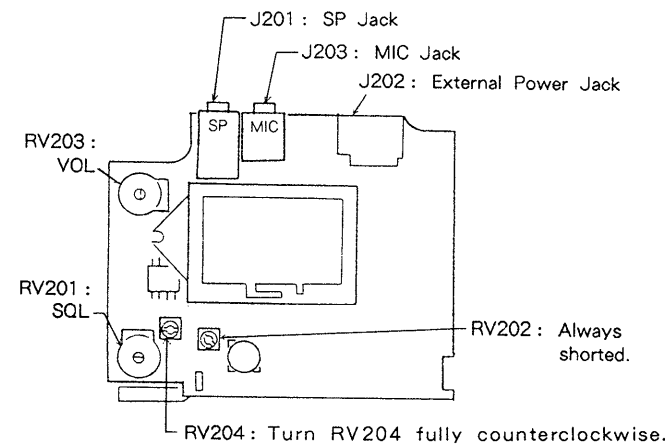
- Any channel is applicable for the adjustment.
- Set modulation meter L.P.F. or H.P.F. to OFF.

Adjustment Points:

SIGNAL Board (Conductor side)

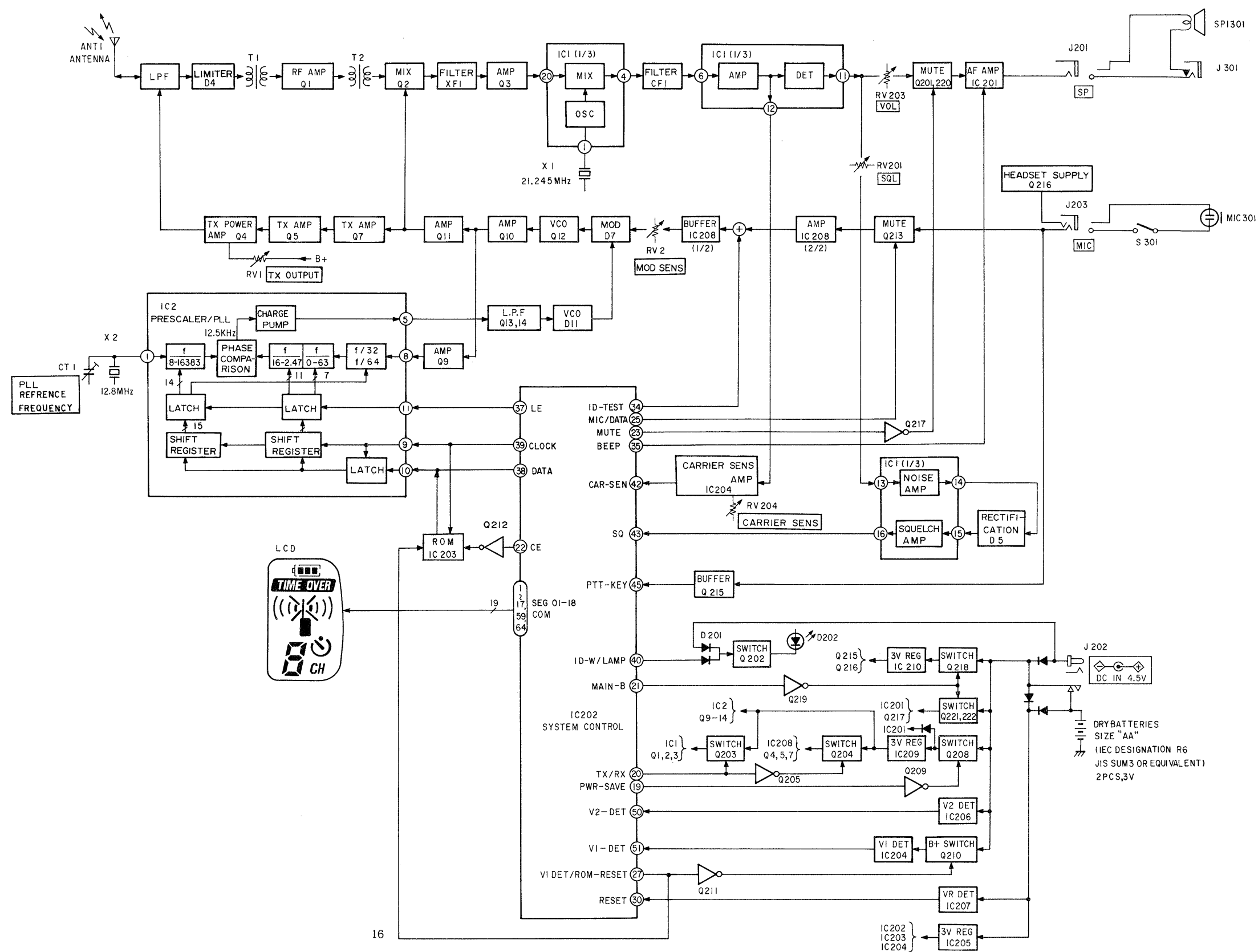


MICON Board (Component side)



SECTION 4 DIAGRAMS

4-1. BLOCK DIAGRAM



4-2. IC DESCRIPTION

● IC2, MB1504PF (prescaler/PLL)

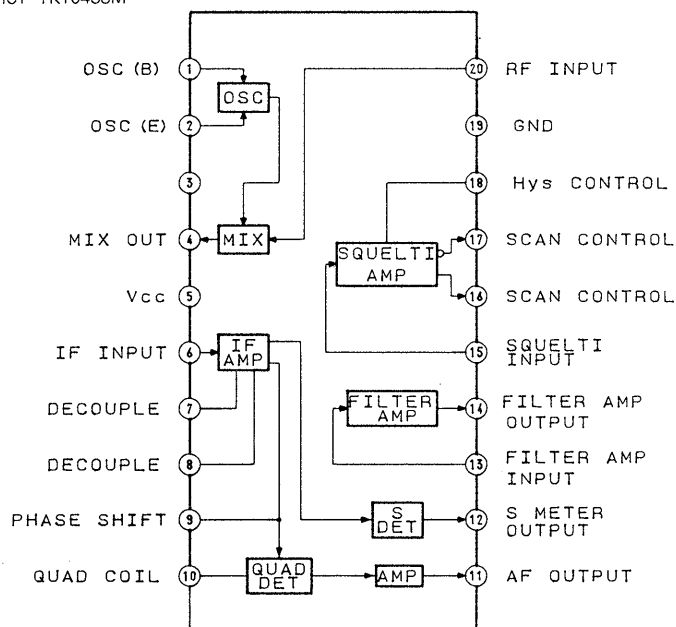
Pin No.	Pin Name	I/O	Discription
1	OSCIN	I	Crystal oscillation connection terminal and an input terminal of the reference frequency divider.
2	OSCOUT	O	
3	VP	—	Power terminal for the charge pump output
4	VCC	—	Power terminal
5	DO	O	Output terminal for the internal charge pump
6	GND	—	GND
7	LD	O	Output terminal for the phase comparator LD = "H" : Locked LD = "L" : Duration corresponding to the phase difference between fr and fp.
8	Fin	I	Input terminal of the prescaler
9	CLK	I	Clock input terminal of the 19-bit and 16-bit shift registers. Data is read out at the start of the clock pulse.
10	DATA	I	Serial data input terminal in binary code. Last bit of the data is a control bit. "H" level : Transmits 15-bit latch data "L" level : Transmits 18-bit latch data
11	LE	I	Load enable signal input terminal. The contents of the shift register is transmitted to the latch with the combination of the control bit of the serial data when LE = "H" (or OPEN).
12	FC	I	Phase switching terminal of the phase comparator. When FC = "L" level, the characteristics of the charge pump and the phase comparator are inverted.
13	Fr	O	Phase comparator input monitor terminal
14	Fp	O	Phase comparator input monitor terminal. It corresponds to the output of the comparison frequency divider.
15	ϕ P	O	Output terminal of the phase comparator for the external charge pump. ϕ P terminal is used for the N-ch open drain output.
16	ϕ R	O	

● IC202, BV24407L (system control)

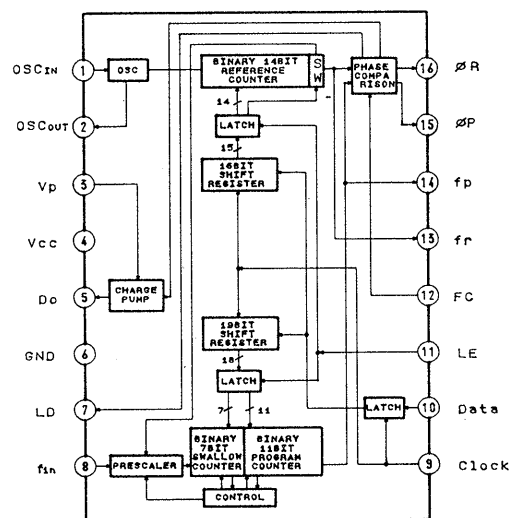
Pin No.	Pin Name	I/O	Discription
1 – 17	SEG2-18	O	LCD display terminal
18			Not used.
19	PWR-SAVE	O	When the reception is conducted in the power save mode and the squelch is ON, unnecessary power is set to OFF to save the power.
20	TX/RX	O	Switching of the transmission and reception. L : Reception, H : Transmission
21	MAIN-B	O	The necessary power is set to ON when transmitting. H : ON
22	CE	O	IC203 is set to the enable when the ID data is received form IC203.
23	MUTE	O	The speaker output is muted. L : MUTE ON
24			Not used.
25	MIC/DATA	O	The transmission data is switched to MIC or ID data. L : MIC
26	GND		GND
27	VIDET/ROM-RESET	O	The capacitor for displaying the rest power of the battery is charged. H : Charged. IC203 is reset after transmitting the CE signal to IC203.
28	OSC2		Oscillation terminal
29	OSC1		Oscillation terminal
30	RESET	I	Reset signal input
31	XI	I	Oscillation terminal
32	XO	O	Oscillation terminal
33	INT (LOCK)	I	PLL lock is detected.
34	ID-TEST	I/O	Test mode is detected when resetting. ID data is output in normal.
35	BEEP	O	BEEP signal is output
36			Not used.
37	LE	O	Set signal after transmitting data to IC2.
38	DATA	I/O	ID data is input from IC203 when resetting. The IC data is output to IC2 in normal
39.	CLOCK	O	Clock signal when transmitting the data to IC2.
40	LAMP OUTPUT		H : Lamp is lit.
41			Not used.
42	CAR-SEN	I	It is detected whether there is a signal or not when transmitting. H : Signal (transmission is not applicable)
43	SQ	I	It is detected whether there is a signal or not when receiving. When there is no signal, the audio output is muted. L : Muted
44	PWR-KEY	I	Power switch detection
45	PTT-KEY	I	Transmission switch detection
46	UP-KEY	I	CHANNEL “+” key switch detection
47	DOWN-KEY	I	CHANNEL “-” key switch detection
48	TIMER-KEY	I	TIMER key switch detection
49	LAMP-KEY	I	LIGHT/BATT key switch detection
50	V2-DET	I	The power is OFF when the power voltage is lower than V2.
51	V1-DET	I	The rest of the power voltage is measured. (The battery charging time of the capacitor is measured.)
52 – 57			Not used.
58	VDD		Power supply
59	COM0	O	LCD common terminal
60 – 63			Not used.
64	SEG1	O	LCD display terminal

4-3. IC BLOCK DIAGRAMS

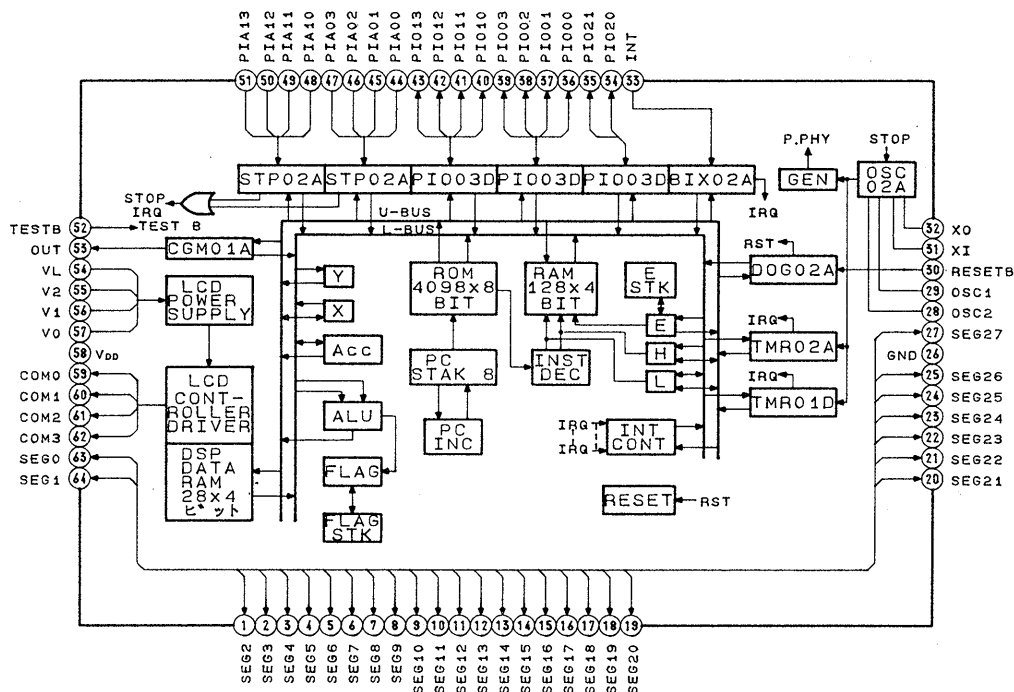
IC1 TK10488M



IC2 MB1504PF-T1



IC202 BU24407L





Ref. No.	Location
D1	C-3
D2	D-2
D3	D-2
D4	I-2
D5	A-6
D6	C-5
D7	C-5
D8	I-6
D10	C-2
D11	C-4
D201	H-14
D202	F-15
D203	D-10
D204	I-18
D205	D-12
D206	E-11
D207	D-10
D208	I-17
D209	F-12
D215	F-12
IC1	B-6
IC2	D-6
IC201	E-10
IC202	F-19
IC203	I-10
IC204	G-21
IC205	F-12
IC206	E-12
IC207	E-12
IC208	H-12
IC209	G-13
IC210	E-14
Q1	G-2
Q2	B-4
Q3	A-5
Q4	C-2
Q5	B-2
Q7	D-3
Q9	I-3
Q10	D-4
Q11	H-4
Q12	H-4
Q13	I-7
Q14	J-6
Q201	G-17
Q202	G-14
Q203	G-13
Q204	G-13
Q205	G-13
Q208	F-13
Q209	F-13
Q210	F-21
Q211	F-21
Q212	I-18
Q213	I-13
Q215	D-12
Q216	D-12
Q217	G-10
Q218	F-14
Q219	F-13
Q220	H-17
Q221	E-11
Q222	D-11

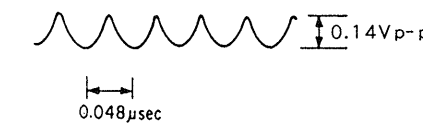
Note on Mounting Diagram :

- ○ — : Parts extracted from the component side.
- ● : Through hole.
- ■ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.

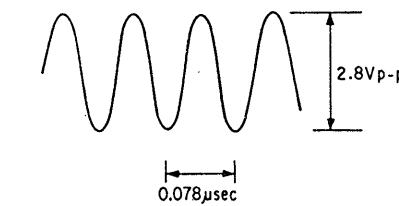
4-5. SCHEMATIC DIAGRAM

Waveform

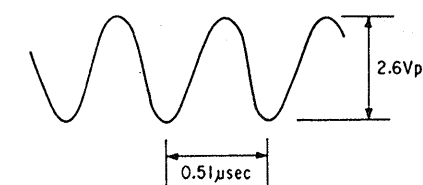
① IC1 (2Pin)



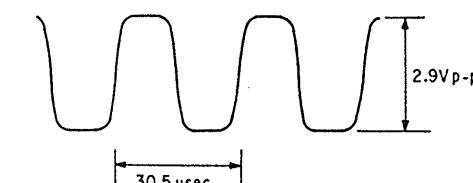
② IC2 (2Pin)



③ IC202 (29Pin)



④ IC202 (32Pin)



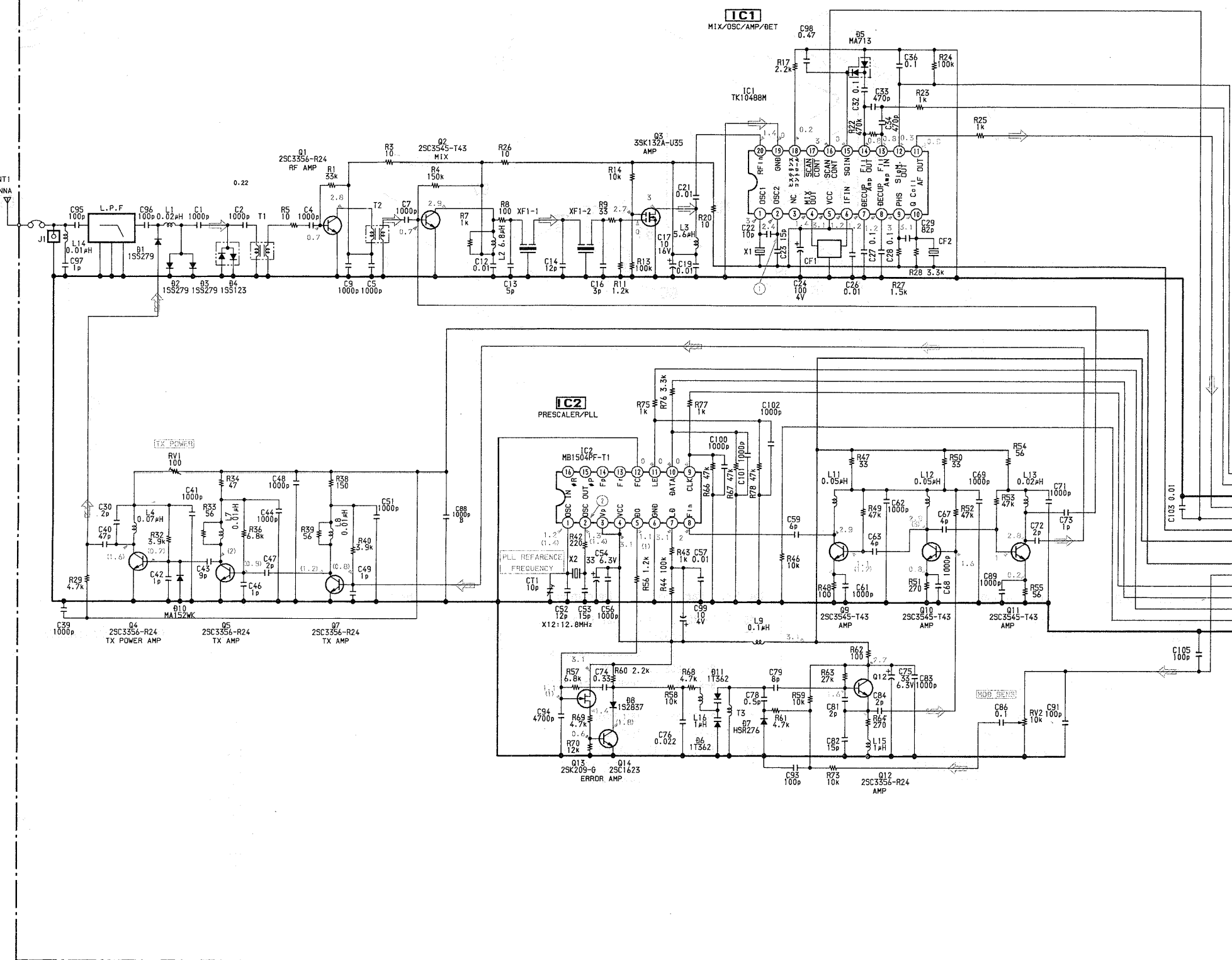
Note on Schematic Diagram :

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{2}$ W or less unless otherwise specified.
- B + Line.
- [] : adjustment for repair.
- Power voltage is dc 4.5V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal detuned conditions.
- () : RX
- () : TX
- Voltages are taken with a VOM (input impedance 10 M Ω).
- Waveforms are taken with an oscilloscope.
- Circled numbers refer to waveforms.
- Signal path.
- $\Rightarrow$: RX
- $\Rightarrow$: TX

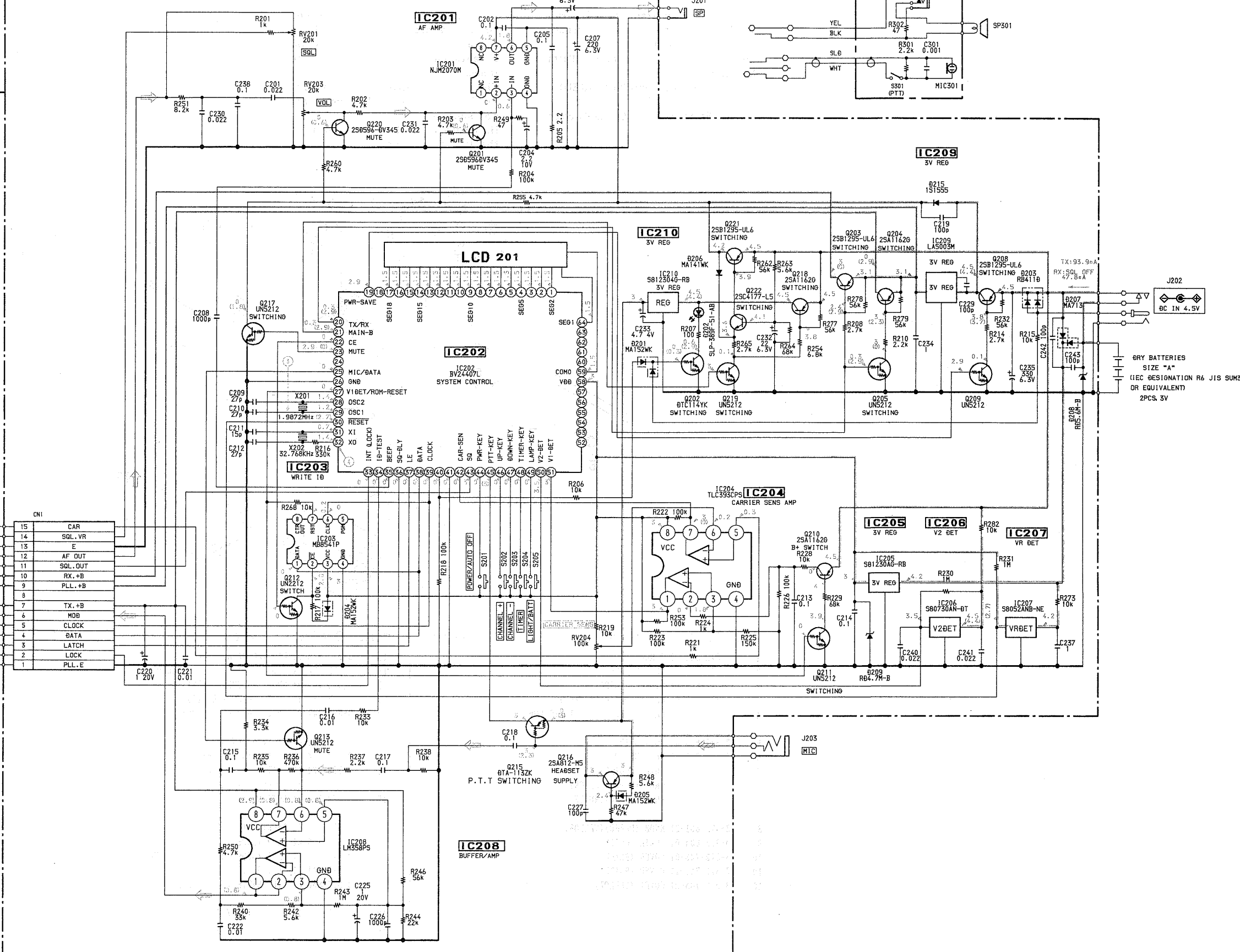
16

-17-

[SIGNAL BOARD]

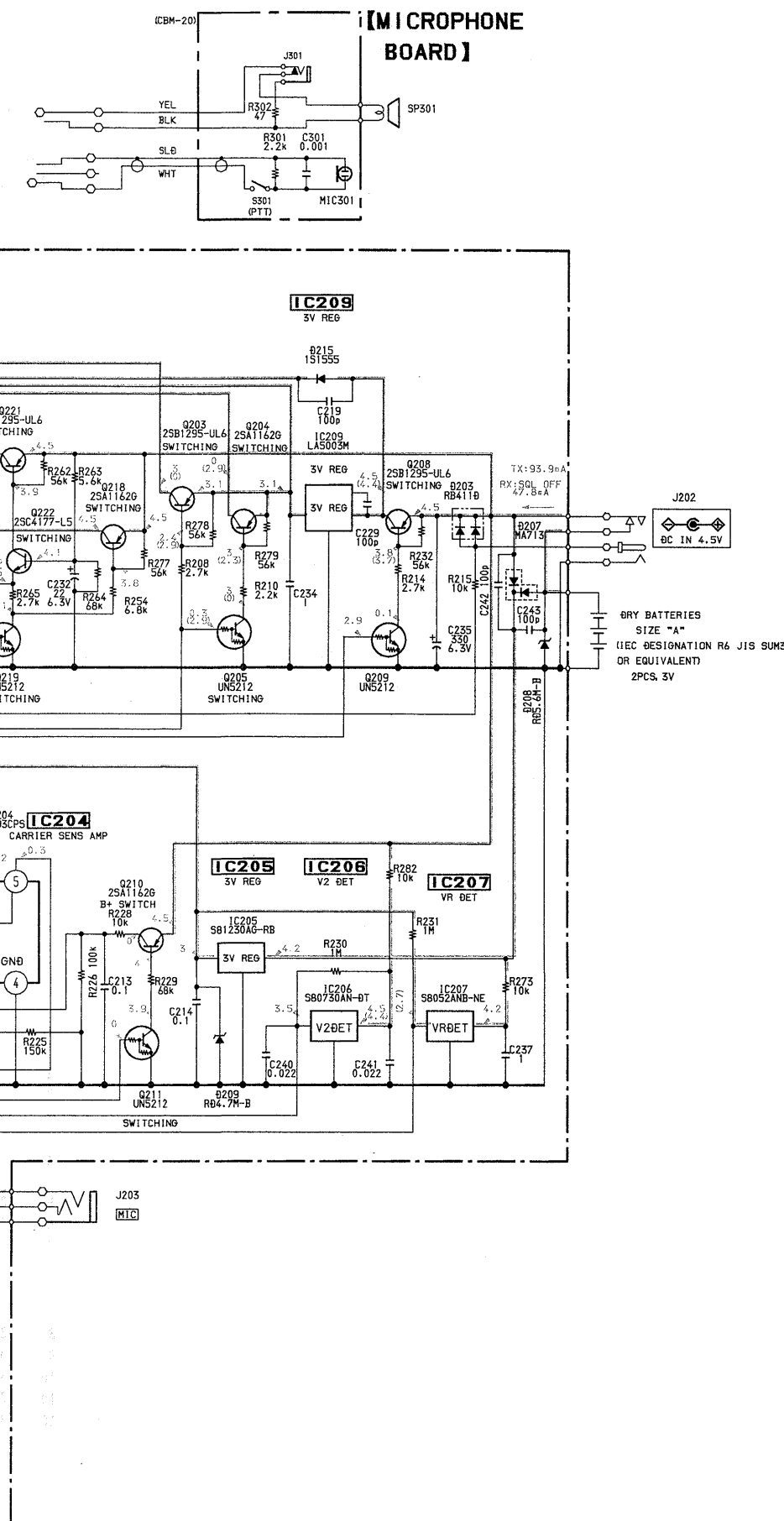


[MICON BOARD]



-19-

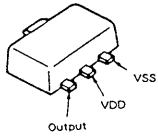
[MICROPHONE BOARD]



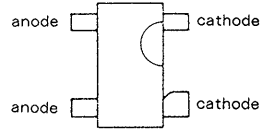
-20-

4-6. SEMICONDUCTOR LEAD LAYOUTS

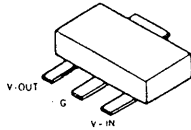
S-8052ANB-NE-S



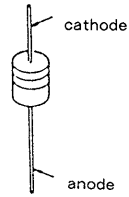
MA713-TW



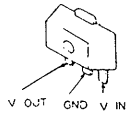
S-80730AN-DT-T1



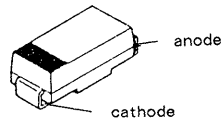
1SS119



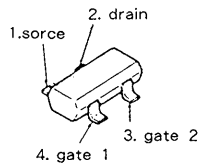
S-81230AG-RB



IT362-01-T8B



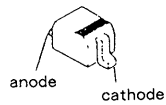
3SK132A-T1U35



SLP389F-51-AB



HSR276TRF



SECTION 5

EXPLODED VIEWS

NOTE:

- XX, - X mean standardized parts, so they may have some differences from the original one.

Color Indication of Appearance Parts
Example:

KNOB, BALANCE (WHITE)...(RED)

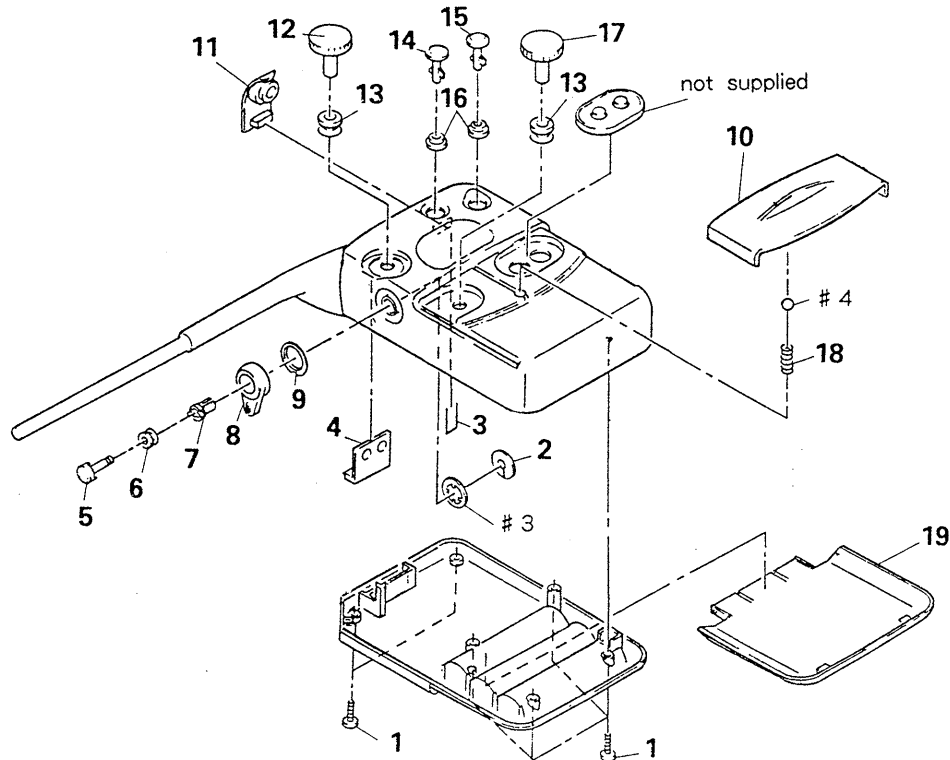
↑ ↑
Parts color Cabinet's color

Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The mechanical parts with no reference number in the exploded views are not supplied.

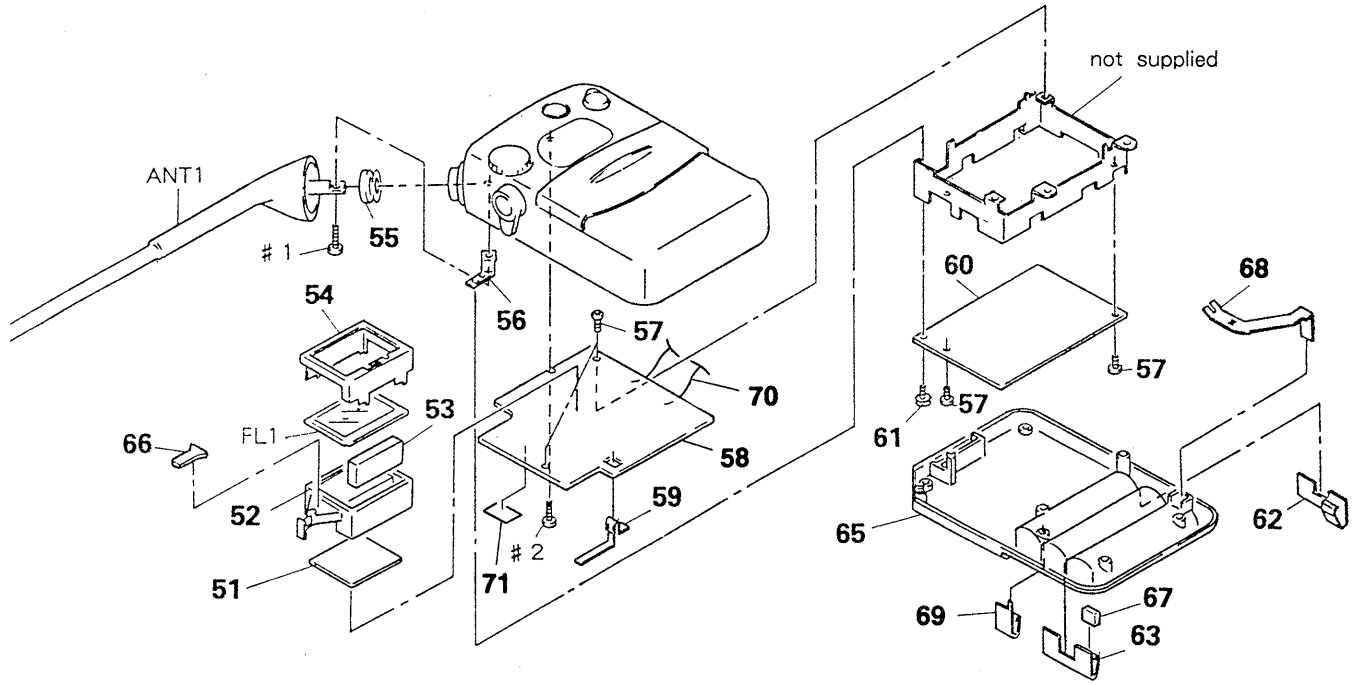
Hardware (# mark) list is given in the last of this parts list.

5-1. MAIN SECTION 1



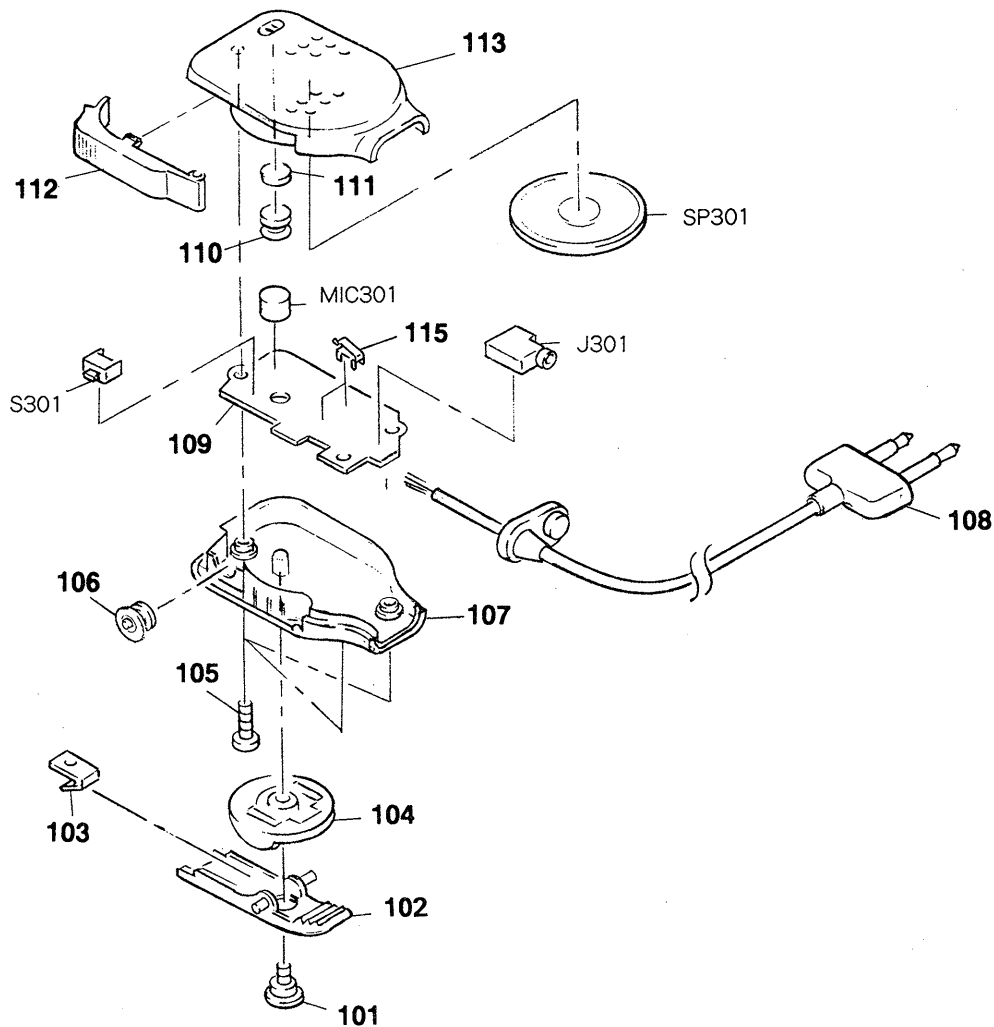
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	3-372-842-01	SCREW		11	3-372-822-01	LID (DC JACK) (BLACK)	
2	3-373-610-01	POLY-SLIDER		11	3-372-822-11	LID (DC JACK) (WHITE, YELLOW)	
* 3	3-372-843-01	STOPPER (LID)		12	3-372-747-01	KNOB (VOLUME) (BLACK)	
4	3-372-832-01	PACKING (JACK) (BLACK)		12	3-372-747-11	KNOB (VOLUME) (WHITE)	
4	3-372-832-11	PACKING (JACK) (WHITE, YELLOW)		12	3-372-747-21	KNOB (VOLUME) (YELLOW)	
5	3-372-826-01	BUTTON (D)		13	3-898-411-01	PACKING, KNOB	
6	3-372-840-01	PACKING (B)		14	3-372-824-01	BUTTON (A) (BLACK)	
7	3-373-609-01	SHAFT (POWER)		14	3-372-824-11	BUTTON (A) (WHITE)	
8	3-372-851-01	KNOB (POWER) (BLACK)		14	3-372-824-31	BUTTON (A) (YELLOW)	
8	3-372-851-11	KNOB (POWER) (WHITE)		15	3-372-824-21	BUTTON (A)	
8	3-372-851-21	KNOB (POWER) (YELLOW)		16	3-372-831-01	PACKING (BUTTON A)	
9	3-372-834-01	PLATE, CLICK		17	3-372-830-01	KNOB (SQUELCH) (BLACK)	
10	3-372-748-01	COVER (BLACK)		17	3-372-830-11	KNOB (SQUELCH) (WHITE, YELLOW)	
10	3-372-748-11	COVER (WHITE)		18	3-372-841-01	SPRING, COMPRESSION	
10	3-372-748-21	COVER (YELLOW)		19	3-372-856-01	LID, BATTERY CASE (BLACK)	
				19	3-372-856-11	LID, BATTERY CASE (WHITE)	
				19	3-372-856-21	LID, BATTERY CASE (YELLOW)	

5-2. MAIN SECTION 2



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
* 51	3-372-828-01	REFLECTOR		65	X-3365-149-1	CABINET (REAR) ASSY (BLACK)	
52	3-372-850-01	PLATE, LIGHT GUIDE		65	X-3365-150-1	CABINET (REAR) ASSY (WHITE)	
53	1-535-962-11	CONDUCTIVE BOARD, CONNECTION		65	X-3365-151-1	CABINET (REAR) ASSY (YELLOW)	
* 54	3-372-821-01	CASE (LCD), SHIELD		66	9-911-838-XX	CUSHION	
55	3-372-833-01	PACKING (ANTENNA)		67	9-911-841-XX	CUSHION, CASSETTE LID	
* 56	3-372-829-01	PLATE (ANTENNA), CONTACT		68	3-372-835-01	TERMINAL (+), BATTERY	
57	3-880-990-41	SCREW (1.7X3), FLAT, (+) SPECIAL		69	3-372-836-01	TERMINAL (-), BATTERY	
* 58	A-3679-359-A	MICRO COMPUTER BOARD, COMPLETE		70	1-641-239-11	FLEXIBLE BOARD	
* 59	3-372-837-01	PLATE, CONTACT (BATT, TERMINAL)		71	3-703-929-01	SPACER, SWITCH	
* 60	A-3679-358-A	SIGNAL BOARD, COMPLETE		ANT1	1-501-520-11	ANTENNA (BLACK)	
61	3-373-613-01	SCREW (M2X4)		ANT1	1-501-520-21	ANTENNA (WHITE, YELLOW)	
62	3-372-839-01	TERMINAL (+/-) (B), BATTERY		FL1	1-809-533-11	DISPLAY PANEL, LIQUID CRYSTAL	
63	3-372-838-01	TERMINAL (+/-) (A), BATTERY					

5-3. MICROPHONE SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101	3-895-517-11	SCREW (2), TAPPING, STEP		110	3-898-411-01	PACKING, KNOB	
102	3-372-853-01	CLIP (A) (BLACK)		* 111	3-372-847-01	CUSHION	
102	3-372-853-21	CLIP (A) (YELLOW)		112	3-372-852-01	BUTTON (PTT) (BLACK)	
* 103	3-373-612-01	SPRING (CLIP), LEAF		112	3-372-852-11	BUTTON (PTT) (WHITE, YELLOW)	
104	3-372-854-01	CLIP (B) (BLACK)		113	X-3363-920-1	CASE (UPPER) ASSY (BLACK)	
104	3-372-854-21	CLIP (B) (YELLOW)		113	X-3363-922-1	CASE (UPPER) ASSY (YELLOW)	
105	3-372-846-01	SCREW		* 115	3-366-518-01	TERMINAL, SPEAKER	
106	3-372-845-01	PACKING (PTT)		J301	1-507-921-00	JACK	
107	3-372-857-01	CASE (LOWER) (BLACK)		MIC301	1-542-095-31	MICROPHONE, ELECTRET CONDENSER	
107	3-372-857-21	CASE (LOWER) (YELLOW)		SP301	1-544-582-11	SPEAKER (3.6CM)	
108	1-690-346-11	CORD (WITH PLUG)		S301	1-572-499-21	SWITCH, TACTIL (PTT)	
* 109	1-641-179-11	MICROPHONE BOARD					

SECTION 6

ELECTRICAL PARTS LIST

MICRO COMPUTER

NOTE:

Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

-XX, -X mean standardized parts, so they may have some difference from the original one.

Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS:

uF: μ F

RESISTORS

All resistors are in ohms.

METAL: metal-film resistor

METAL OXIDE: Metal Oxide-film resistor

F: nonflammable

COILS

uH: μ H

SEMICONDUCTORS

In each case, u: μ , for example:

uA...: μ A..., uPA..., μ PA...,

uPB..., μ PB..., uPC..., μ PC...,

uPD..., μ PD...

When indicating parts by reference number, please include the board name.

JE: Tourist Model

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
*	A-3679-359-A	MICRO COMPUTER BOARD, COMPLETE *****		C227	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
	1-535-962-11	CONDUCTIVE BOARD, CONNECTION		C229	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
	3-703-929-01	SPACER, SWITCH		C230	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
*	3-372-821-01	CASE (LCD), SHIELD		C231	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
*	3-372-828-01	REFLECTOR		C232	1-135-161-21	TANTALUM CHIP 22uF 10% 10V	
*	3-372-837-01	PLATE, CONTACT (BATT, TERMINAL)		C233	1-135-151-21	TANTALUM CHIP 4.7uF 20% 4V	
	3-372-850-01	PLATE, LIGHT GUIDE		C234	1-164-346-11	CERAMIC CHIP 1uF 16V	
	< CAPACITOR >			C235	1-124-442-00	ELECT 330uF 20% 6.3V	
C201	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V		C237	1-164-346-11	CERAMIC CHIP 1uF 16V	
C202	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		C238	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C204	1-135-149-21	TANTALUM CHIP 2.2uF 20% 10V		C240	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C205	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		C241	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
				C242	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C206	1-128-390-11	ELECT 220uF 20% 6.3V		C243	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C207	1-128-390-11	ELECT 220uF 20% 6.3V		< CONNECTOR >			
C208	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V		CN1	1-573-206-21	CONNECTOR, FPC (PC BOARD) 15P	
C209	1-162-946-11	CERAMIC CHIP 27PF 5% 50V		< DIODE >			
C210	1-162-946-11	CERAMIC CHIP 27PF 5% 50V		D201	8-719-400-18	DIODE MA152WK	
C211	1-162-943-11	CERAMIC CHIP 15PF 5% 50V		D202	8-719-989-49	DIODE SLP-389F-51-AB	
C212	1-162-946-11	CERAMIC CHIP 27PF 5% 50V		D203	8-719-975-40	DIODE RB411D	
C213	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		D204	8-719-400-18	DIODE MA152WK	
C214	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		D205	8-719-400-18	DIODE MA152WK	
C215	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		D206	8-719-404-35	DIODE MA141WK	
C216	1-164-232-11	CERAMIC CHIP 0.01uF 50V		D207	8-719-404-16	DIODE MA713-TW	
C217	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		D208	8-719-105-91	DIODE RD5.6M-B2	
C218	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		D209	8-719-157-23	DIODE RD4.7M-B	
C219	1-162-953-11	CERAMIC CHIP 100p 5% 50V		D215	8-719-911-19	DIODE 1SS119	
C220	1-135-177-21	TANTALUM CHIP 1uF 20% 20V					
C221	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V					
C222	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V					
C225	1-135-177-21	TANTALUM CHIP 1uF 20% 20V					
C226	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V					

MICRO COMPUTER

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
< IC >							
IC201	8-759-046-84 IC	NJM2070M		R222	1-216-845-11 METAL CHIP	100K 5% 1/16W	
IC202	8-759-070-07 IC	BU3607K		R223	1-216-845-11 METAL CHIP	100K 5% 1/16W	
IC203	8-759-924-28 IC	MB8541PF		R224	1-216-821-11 METAL CHIP	1K 5% 1/16W	
IC204	8-759-929-21 IC	TLC27L2CPS (E)		R225	1-216-847-11 METAL CHIP	150K 5% 1/16W	
IC205	8-759-939-41 IC	S-81230AG-RB		R226	1-216-845-11 METAL CHIP	100K 5% 1/16W	
IC206	8-759-519-46 IC	S-80730AN-DT-T1		R227	1-216-864-11 METAL CHIP	0 5% 1/16W	
IC207	8-759-945-21 IC	S-8052ANB-NE		R228	1-216-833-11 METAL CHIP	10K 5% 1/16W	
IC208	8-759-983-69 IC	LM358PS		R229	1-216-843-11 METAL CHIP	68K 5% 1/16W	
IC209	8-759-801-15 IC	LA5003M		R230	1-216-857-11 METAL CHIP	1M 5% 1/16W	
IC210	8-759-939-41 IC	S-81230AG-RB		R231	1-216-857-11 METAL CHIP	1M 5% 1/16W	
< JACK >							
J201	1-563-298-31 JACK (SMALL TYPE) (DIA. 3.5) (SP)			R232	1-216-842-11 METAL CHIP	56K 5% 1/16W	
J202	1-573-180-11 JACK, DC (DC IN)			R233	1-216-833-11 METAL CHIP	10K 5% 1/16W	
J203	1-573-996-11 JACK, SMALL (WATERPROOF) (MIC)			R234	1-216-827-11 METAL CHIP	3.3K 5% 1/16W	
< TRANSISTOR >				R235	1-216-833-11 METAL CHIP	10K 5% 1/16W	
Q201	8-729-141-75 TRANSISTOR	2SD596DV345		R236	1-216-853-11 METAL CHIP	470K 5% 1/16W	
Q202	8-729-900-52 TRANSISTOR	DTC114YK		R237	1-216-825-11 METAL CHIP	2.2K 5% 1/16W	
Q203	8-729-807-87 TRANSISTOR	2SB1295-UL6		R238	1-216-833-11 METAL CHIP	10K 5% 1/16W	
Q204	8-729-216-22 TRANSISTOR	2SA1162-G		R240	1-216-839-11 METAL CHIP	33K 5% 1/16W	
Q205	8-729-402-45 TRANSISTOR	UN5212		R242	1-216-830-11 METAL CHIP	5.6K 5% 1/16W	
Q208	8-729-807-87 TRANSISTOR	2SB1295-UL6		R243	1-216-857-11 METAL CHIP	1M 5% 1/16W	
Q209	8-729-402-45 TRANSISTOR	UN5212		R244	1-216-837-11 METAL CHIP	22K 5% 1/16W	
Q210	8-729-216-22 TRANSISTOR	2SA1162-G		R245	1-216-864-11 METAL CHIP	0 5% 1/16W	
Q211	8-729-402-45 TRANSISTOR	UN5212		R246	1-216-842-11 METAL CHIP	56K 5% 1/16W	
Q212	8-729-402-45 TRANSISTOR	UN5212		R247	1-216-841-11 METAL CHIP	47K 5% 1/16W	
Q213	8-729-402-45 TRANSISTOR	UN5212		R248	1-216-830-11 METAL CHIP	5.6K 5% 1/16W	
Q215	8-729-423-96 TRANSISTOR	UN2119		R249	1-216-805-11 METAL CHIP	47 5% 1/16W	
Q216	8-729-216-22 TRANSISTOR	2SA1162-G		R250	1-216-829-11 METAL CHIP	4.7K 5% 1/16W	
Q217	8-729-402-45 TRANSISTOR	UN5212		R251	1-216-832-11 METAL CHIP	8.2K 5% 1/16W	
Q218	8-729-216-22 TRANSISTOR	2SA1162-G		R252	1-216-864-11 METAL CHIP	0 5% 1/16W	
Q219	8-729-402-45 TRANSISTOR	UN5212		R253	1-216-845-11 METAL CHIP	100K 5% 1/16W	
Q220	8-729-141-75 TRANSISTOR	2SD596DV345		R254	1-216-831-11 METAL CHIP	6.8K 5% 1/16W	
Q221	8-729-807-87 TRANSISTOR	2SB1295-UL6		R255	1-216-829-11 METAL CHIP	4.7K 5% 1/16W	
Q222	8-729-117-32 TRANSISTOR	2SC4177		R256	1-216-864-11 METAL CHIP	0 5% 1/16W	
< RESISTOR >				R257	1-216-864-11 METAL CHIP	0 5% 1/16W	
R201	1-216-821-11 METAL CHIP	1K 5% 1/16W		R260	1-216-829-11 METAL CHIP	4.7K 5% 1/16W	
R202	1-216-829-11 METAL CHIP	4.7K 5% 1/16W		R261	1-216-864-11 METAL CHIP	0 5% 1/16W	
R203	1-216-829-11 METAL CHIP	4.7K 5% 1/16W		R262	1-216-842-11 METAL CHIP	56K 5% 1/16W	
R204	1-216-845-11 METAL CHIP	100K 5% 1/16W		R263	1-216-830-11 METAL CHIP	5.6K 5% 1/16W	
R205	1-216-789-11 METAL CHIP	2.2 5% 1/16W		R264	1-216-843-11 METAL CHIP	68K 5% 1/16W	
R206	1-216-833-11 METAL CHIP	10K 5% 1/16W		R265	1-216-826-11 METAL CHIP	2.7K 5% 1/16W	
R207	1-216-809-11 METAL CHIP	100 5% 1/16W		R267	1-216-864-11 METAL CHIP	0 5% 1/16W	
R208	1-216-826-11 METAL CHIP	2.7K 5% 1/16W		R268	1-216-833-11 METAL CHIP	10K 5% 1/16W	
R210	1-216-825-11 METAL CHIP	2.2K 5% 1/16W		R269	1-216-864-11 METAL CHIP	0 5% 1/16W	
R214	1-216-826-11 METAL CHIP	2.7K 5% 1/16W		R270	1-216-864-11 METAL CHIP	0 5% 1/16W	
R215	1-216-833-11 METAL CHIP	10K 5% 1/16W		R271	1-216-864-11 METAL CHIP	0 5% 1/16W	
R216	1-216-851-11 METAL CHIP	330K 5% 1/16W		R273	1-216-833-11 METAL CHIP	10K 5% 1/16W	
R217	1-216-845-11 METAL CHIP	100K 5% 1/16W		R272	1-216-864-11 METAL CHIP	0 5% 1/16W	
R218	1-216-845-11 METAL CHIP	100K 5% 1/16W		R274	1-216-864-11 METAL CHIP	0 5% 1/16W	
R219	1-216-833-11 METAL CHIP	10K 5% 1/16W		R275	1-216-864-11 METAL CHIP	0 5% 1/16W	
R221	1-216-821-11 METAL CHIP	1K 5% 1/16W		R276	1-216-864-11 METAL CHIP	0 5% 1/16W	
				R277	1-216-842-11 METAL CHIP	56K 5% 1/16W	
				R278	1-216-842-11 METAL CHIP	56K 5% 1/16W	
				R279	1-216-842-11 METAL CHIP	56K 5% 1/16W	
				R280	1-216-864-11 METAL CHIP	0 5% 1/16W	
				R281	1-216-864-11 METAL CHIP	0 5% 1/16W	

MICRO COMPUTER

MICROPHONE

SIGNAL

Ref. No.	Part No.	Description	Remarks
R282	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R285	1-216-295-00	METAL CHIP 0 5% 1/10W	
< VARIABLE RESISTOR >			
RV201	1-241-682-11	RES, VAR, CARBON 20K (SQL)	
RV203	1-241-681-11	RES, VAR, CARBON 20K (VOL)	
RV204	1-238-667-21	RES, ADJ, CERMET 100K	
< SWITCH >			
S201	1-554-088-00	SWITCH, KEY BOARD (POWER/AUTO OFF)	
S202	1-572-494-21	SWITCH, KEY BOARD (CHANNEL +)	
S203	1-572-494-21	SWITCH, KEY BOARD (CHANNEL -)	
S204	1-572-494-21	SWITCH, KEY BOARD (TIMER)	
S205	1-572-494-21	SWITCH, KEY BOARD (LIGHT/BATT)	
< VIBRATOR >			
X201	1-579-488-41	VIBRATOR, CRYSTAL	
X202	1-579-489-11	VIBRATOR, CRYSTAL	

*	1-641-179-11	MICROPHONE BOARD	

	1-690-346-11	CORD (WITH PLUG)	
*	3-366-518-01	TERMINAL, SPEAKER	
< CAPACITOR >			
C301	1-101-001-00	CERAMIC 0.001uF 50V	
< JACK >			
J301	1-507-921-00	JACK	
< RESISTOR >			
R301	1-249-421-11	CARBON 2.2K 5% 1/4W	
R302	1-249-401-11	CARBON 47 5% 1/4W	
< SWITCH >			
S301	1-572-499-21	SWITCH, TACTIL (PTT)	
< MIC >			
MIC301	1-542-095-31	MICROPHONE, ELECTRET CONDENSER	

Ref. No.	Part No.	Description	Remarks
*	A-3679-358-A	SIGNAL BOARD, COMPLETE	

	1-641-239-11	FLEXIBLE BOARD	
< CAPACITOR >			
C1	1-164-357-11	CERAMIC CHIP 1000PF 5% 50V	
C2	1-164-357-11	CERAMIC CHIP 1000PF 5% 50V	
C4	1-164-357-11	CERAMIC CHIP 1000PF 5% 50V	
C5	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C7	1-164-357-11	CERAMIC CHIP 1000PF 5% 50V	
C9	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C12	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C13	1-162-936-11	CERAMIC CHIP 5PF 0.25PF 50V	
C14	1-162-942-11	CERAMIC CHIP 12PF 5% 50V	
C16	1-162-934-11	CERAMIC CHIP 3PF 0.25PF 50V	
C17	1-124-779-00	ELECT CHIP 10uF 20% 16v	
C19	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C21	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C22	1-162-941-11	CERAMIC CHIP 10PF 0.5PF 50V	
C23	1-162-943-11	CERAMIC CHIP 15PF 5% 50V	
C24	1-126-209-11	ELECT CHIP 100uF 20% 4V	
C26	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C27	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C28	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C29	1-162-952-11	CERAMIC CHIP 82PF 5% 50V	
C30	1-162-907-11	CERAMIC CHIP 2PF 0.25PF 50V	
C32	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C33	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C34	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C36	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C39	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C40	1-162-949-11	CERAMIC CHIP 47PF 5% 50V	
C41	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C42	1-162-930-11	CERAMIC CHIP 1PF 0.25PF 50V	
C43	1-162-940-11	CERAMIC CHIP 9PF 0.5PF 50V	
C44	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C46	1-162-930-11	CERAMIC CHIP 1PF 0.25PF 50V	
C47	1-162-932-11	CERAMIC CHIP 2PF 0.25PF 50V	
C48	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C49	1-162-930-11	CERAMIC CHIP 1PF 0.25PF 50V	
C51	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C52	1-162-916-11	CERAMIC CHIP 12PF 5% 50V	
C53	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C54	1-135-162-21	TANTALUM CHIP 33uF 20% 6.3V	
C56	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C57	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C59	1-162-937-11	CERAMIC CHIP 6PF 0.5PF 50V	
C61	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C62	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C63	1-162-935-11	CERAMIC CHIP 4PF 0.25PF 50V	
C67	1-162-935-11	CERAMIC CHIP 4PF 0.25PF 50V	
C68	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C69	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C71	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C72	1-162-932-11	CERAMIC CHIP 2PF 0.25PF 50V	

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Ref. No.	Part No.	Description	Remarks
C73	1-162-930-11	CERAMIC CHIP 1PF 0.25PF 50V	
C74	1-135-006-11	CERAMIC CHIP 0.33uF 10% 25V	
C75	1-135-162-21	TANTALUM CHIP 33uF 20% 6.3V	
C76	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C78	1-163-082-00	CERAMIC CHIP 0.5PF 0.25PF 50V	
C79	1-162-913-11	CERAMIC CHIP 8PF 0.5PF 50V	
C81	1-162-907-11	CERAMIC CHIP 2PF 0.25PF 50V	
C82	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C83	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C84	1-162-907-11	CERAMIC CHIP 2PF 0.25PF 50V	
C86	1-135-070-00	TANTALUM CHIP 0.1uF 10% 35V	
C88	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C89	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C91	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C93	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C94	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C95	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C96	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C97	1-162-905-11	CERAMIC CHIP 1PF 0.25PF 50V	
C98	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C99	1-135-157-21	TANTALUM CHIP 10uF 20% 6.3V	
C100	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C101	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C102	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C103	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C105	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
< FILTER >			
CF1	1-579-537-11	FILTER, CERAMIC	
CF2	1-579-490-11	FILTER, CERAMIC(DISCRIMINATOR)	
< TRIMMER >			
CT1	1-141-327-11	CAP, VAR, TRIMMER (CHIP TYPE) 10P	
< DIODE >			
D1	8-719-123-79	DIODE 1SS279	
D2	8-719-123-79	DIODE 1SS279	
D3	8-719-123-79	DIODE 1SS279	
D4	8-719-800-76	DIODE 1SS226	
D5	8-719-404-16	DIODE MA713	
D6	8-719-002-79	DIODE 1T362	
D7	8-719-981-51	DIODE HSR276	
D8	8-719-400-18	DIODE MA152WK	
D10	8-719-400-18	DIODE MA152WK	
D11	8-719-002-79	DIODE 1T362	
< IC >			
IC1	8-759-046-82	IC TK10488M	
IC2	8-759-500-34	IC MB1504PF	
< COIL >			
L1	1-410-798-11	INDUCTOR CHIP 0.02uH	
L2	1-412-004-31	INDUCTOR CHIP 6.8uH	
L3	1-412-003-41	INDUCTOR CHIP 5.6uH	
L4	1-410-805-11	INDUCTOR CHIP 0.07uH	

Ref. No.	Part No.	Description	Remarks
L7	1-410-795-21	INDUCTOR CHIP 0.01uH	
L8	1-410-795-21	INDUCTOR CHIP 0.01uH	
L9	1-410-807-11	INDUCTOR CHIP 0.1uH	
L11	1-410-803-11	INDUCTOR CHIP 0.05uH	
L12	1-410-803-11	INDUCTOR CHIP 0.05uH	
L13	1-410-797-11	INDUCTOR CHIP 0.02uH	
L14	1-410-795-21	INDUCTOR CHIP 0.01uH	
L15	1-410-993-11	INDUCTOR CHIP 1uH	
L16	1-410-993-11	INDUCTOR CHIP 1uH	
< FILTER >			
LPF1	1-239-186-11	LOW PASS FILTER	
< TRANSISTOR >			
Q1	8-729-143-46	TRANSISTOR 2SC3356-R24	
Q2	8-729-107-31	TRANSISTOR 2SC3545	
Q3	8-729-114-55	TRANSISTOR 3SK132A	
Q4	8-729-143-46	TRANSISTOR 2SC3356-R24	
Q5	8-729-143-46	TRANSISTOR 2SC3356-R24	
Q7	8-729-143-46	TRANSISTOR 2SC3356-R24	
Q9	8-729-107-31	TRANSISTOR 2SC3545	
Q10	8-729-107-31	TRANSISTOR 2SC3545	
Q11	8-729-107-31	TRANSISTOR 2SC3545	
Q12	8-729-143-46	TRANSISTOR 2SC3356-R24	
Q13	8-729-220-23	TRANSISTOR 2SK209G	
Q14	8-729-100-66	TRANSISTOR 2SC1623	
< RESISTOR >			
R1	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R3	1-216-797-11	METAL CHIP 10 5% 1/16W	
R4	1-216-847-11	METAL CHIP 150K 5% 1/16W	
R5	1-216-797-11	METAL CHIP 10 5% 1/16W	
R6	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R7	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R8	1-216-809-11	METAL CHIP 100 5% 1/16W	
R9	1-216-803-11	METAL CHIP 33 5% 1/16W	
R10	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R11	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
R13	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R14	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R15	1-216-295-00	METAL CHIP 0 5% 1/10W	
R17	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R19	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R20	1-216-797-11	METAL CHIP 10 5% 1/16W	
R22	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R23	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R24	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R25	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R26	1-216-797-11	METAL CHIP 10 5% 1/16W	
R27	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R28	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R29	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R32	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	

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Ref. No.	Part No.	Description	Remarks
R33	1-216-806-11	METAL GLAZE 56 5% 1/16W	
R34	1-216-805-11	METAL CHIP 47 5% 1/16W	
R36	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R38	1-216-811-11	METAL CHIP 150 5% 1/16W	
R39	1-216-806-11	METAL GLAZE 56 5% 1/16W	
R40	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R41	1-216-864-11	METAL CHIP 0 5% 1/16W	
R42	1-216-813-11	METAL CHIP 220 5% 1/16W	
R43	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R44	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R45	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R46	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R47	1-216-803-11	METAL CHIP 33 5% 1/16W	
R48	1-216-809-11	METAL CHIP 100 5% 1/16W	
R49	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R50	1-216-803-11	METAL CHIP 33 5% 1/16W	
R51	1-216-814-11	METAL CHIP 270 5% 1/16W	
R52	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R53	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R54	1-216-806-11	METAL GLAZE 56 5% 1/16W	
R55	1-216-806-11	METAL GLAZE 56 5% 1/16W	
R56	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
R57	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R58	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R59	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R60	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R61	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R62	1-216-809-11	METAL CHIP 100 5% 1/16W	
R63	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R64	1-216-814-11	METAL CHIP 270 5% 1/16W	
R66	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R67	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R68	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R69	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R70	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R73	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R75	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R76	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R77	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R78	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R80	1-216-864-11	METAL CHIP 0 5% 1/16W	
		< VARIABLE RESISTOR >	
RV1	1-238-658-11	RES, ADJ, CERMET 100	
RV2	1-238-664-11	RES, ADJ, CERMET 10K	
		< TRANSFORMER >	
T1	1-426-572-11	TRANSFORMER, HIGH-FREQUENCY	
T2	1-426-572-11	TRANSFORMER, HIGH-FREQUENCY	
T3	1-406-439-11	COIL (OSC)	

Ref. No.	Part No.	Description	Remarks
		< VIBRATOR >	
X1	1-579-486-41	VIBRATOR, CRYSTAL	
X2	1-579-485-41	VIBRATOR, CRYSTAL 12.8MHz	
		< FILTER >	
XF1	1-579-487-21	FILTER, CRYSTAL	

		MISCELLANEOUS	

ANT1	1-501-520-11	ANTENNA (BLACK)	
ANT1	1-501-520-21	ANTENNA (WHITE, YELLOW)	
SP301	1-544-582-11	SPEAKER (3.6CM)	

		ACCESSORIES & PACKING MATERIALS	

	3-372-849-01	SCREW (M3), ORNAMENTAL	
	3-372-855-01	HOLDER (BELT)	
	3-374-287-01	CASE, CARRYING	
*	3-379-654-01	INDIVIDUAL CARTON	
	3-701-616-00	BAG, POLYETHYLENE	
	3-701-631-00	BAG, POLYETHYLENE	
*	3-703-713-41	STICKER, SONY SYMBOL (10)	
	3-754-102-11	MANUAL, INSTRUCTION (ENGLISH)	
*	3-755-210-11	INSTRUCTION (E)	
	7-624-104-04	STOP RING 2.0, TYPE -E	

		HARDWARE LIST	

#1	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT	
#2	7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT	
#3	7-624-190-31	STOP RING 4, TYPE-CS	
#4	7-671-156-01	BALL, STAINLESS	

